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 AF 01411 (DECEMBER 2002)  
 UNITED STATES AIR FORCE PAFB/CCAFS  
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#### SECTION 01411

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12/02

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SECTION 01411

GENERAL SAFETY REQUIREMENTS  
 12/02

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 NOTE: This narrowscope section covers mandatory  
 safety requiriements.  
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PART 1 GENERAL

1.1 SUMMARY

The requirements of this Section apply to, and are a component part of, each section of the specifications.

1.2 REFERENCES

The publications listed below form a part of this section to the extent referenced:

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 (2002) Occupational Safety and Health  
 Standards for General Industry

29 CFR 1926 (2002) Occupational Safety and Health  
 Standards for Construction Industry

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 241 (2000) Safeguarding Construction,  
 Alteration, and Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE EM 385-1-1 (1996) Safety and Health Requirements  
 Manual

UNITED STATES AIR FORCE (USAF)- 45TH SPACE WING (SWI)

45 SWI 32-2001 (2002) Fire and Emergency Service Program

45 SWI 32-7001 (2000) Exterior Lighting Management

NOTE: The Contractor and all of its subcontractors are required to comply with all applicable 32, 40, 48 and 91-Series AFI's and National Consensus Standards.

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01330

SUBMITTALS, in sufficient detail to show full compliance with the specification:

#### SD-07 Certificates

Statements for the following items shall be submitted in accordance with paragraphs entitled, "Accident Prevention Plan" of this section.

#### Accident Prevention Plan

License Certificates for radiation materials and equipment shall be submitted to the Contracting Officer prior to beginning work.

### 1.4 ACCIDENT PREVENTION PLAN

The Contractor is required to follow all OSHA regulations. The Contractor may not expose government property, workers of the government or any other Contractor, or the general public to hazards they may create. The Contractor shall submit an Accident Prevention Plan for approval to the Contracting Office and to the Wing Ground Safety Office (45 SW/SEG) prior to commencement of work. This plan must detail how government property, the public and workers from other employers will be protected, but shall not include details of the Contractor's internal safety program for the protection of their workers, since that is an issue between the Contractor and OSHA. The Accident Prevention Plan shall be detailed to the scope of this project.

Employers are responsible to ensure compliance with OSHA for the protection of their workers.

### 1.5 GENERAL SAFETY PROVISIONS

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**NOTE: USE PARAGRAPH 1.5.1 ONLY IF WORK IS AT CCAFS.**  
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#### [1.5.1 Safety Briefing

All personnel may attend QG100CAS, CCAFS General Safety. This briefing is held, with a 24 hour advance appointment, in the Training Office, Building 1723, CCAFS. The Contracting Officer will schedule this briefing per your request. In addition, all personnel may attend additional training, depending on the location of work.

#### ]1.5.2 Field Supervisor

Maintain, full time for the duration of the project, a qualified and capable supervisor who shall be in attendance at the project site at all times. The field supervisor may be a "working" supervisor. He shall be authorized to act on all project work.

#### 1.5.3 Housekeeping

Sufficient personnel and equipment shall be provided to ensure compliance with all housekeeping requirements. Work will not be allowed in those areas that do not comply with the requirements of Section 14.C "Housekeeping" of COE EM 385-1-1. Job sites are to be kept clean on an ongoing, daily basis. All areas are to be thoroughly cleaned prior to

leaving the jobsite at completion of project work.

#### 1.5.4 Road Construction Safety

The Contractor shall comply with State of Florida Department of Transportation regulations in regard to safety, barrier and marking requirement for road construction/work.

#### 1.6 ACCIDENT TREATMENT AND RECORDS

Contractor shall post emergency first aid and ambulance information at the project site.

Emergency medical support is available by dialing 911 from any base hard-wired telephone, or [867-7911 from cellular phones on CCAFS] [494-7642 from cellular phones on PAFB]. EMS technicians will respond to provide on-site evaluation and transport for seriously injured personnel to the nearest clinic or area hospital. Personnel with non-life-threatening emergencies will be advised to have their supervisor provide transportation. Such treatment shall be recorded by the Contractor and reported to the Contracting Officer.

#### 1.7 FIRE PREVENTION AND PROTECTION

Open-flame heating devices will not be permitted except by approval in writing from the Contracting Officer. Approval for the use of open fires and open-flame heating devices will not relieve the Contractor from the responsibility for any damage incurred because of fires.

Burning trash, brush, or wood on the project site shall not be permitted.

##### 1.7.1 Firewatch

A firewatch will be required for any cutting, welding or operation with any equipment producing sparks and/or having an open flame. The field supervisor shall be responsible for designating one of his personnel as a dedicated firewatch and providing his own fully-charged fire extinguishers of the appropriate type and number as required. No cutting, welding or open flame operations shall be started without the proper firewatch and without a burn permit. Burn permits, issued by the CCAFS Fire Department, will be provided by the Contracting Officer or his representative. Requests for burn permits must be made at least 24 hours prior to starting the operation. Saturday and Sunday requests are to be submitted by 1200 hours on the Thursday preceding the day of request.

##### 1.7.2 Smoking/Open Flames

Smoking, any open flames, non explosive proof electrical equipment and tools, and spark producing devices are strictly prohibited in all areas where explosive vapors from adhesives, dopes, varnishes, lacquers, thinners, or paints may be present and when these materials are used.

Burning or trash or rubbish on PAFB, CCAFS, or any other 45SW facility is prohibited.

##### 1.7.3 Smoking Restrictions

Smoking is restricted in many areas of [CCAFS][PAFB]. All of the prohibitions listed below are applicable and Supervisory personnel are

responsible for compliance.

Smoking is prohibited within any [CCAFS] [PAFB] Facility.

Smoking will be permitted only in areas designated by the U.S. Air Force. This is a controlled area and the "NO SMOKING" requirement shall be strictly enforced. All cigarette lighting items, i.e., lighters, matches, etc., shall be surrendered to the Gate Security Guard before entering the Launch Complexes and other designated facilities where propellants or explosives may be used, handled or stored.

Smoking will be permitted only in areas designated by the U.S. Air Force. Smoking areas are clearly defined by the lines painted on the concrete or asphalt surfaces (with exception of the guard shacks). Flame, spark, or heat producing devices are not allowed on the on launch complexes or any other area where explosives or propellants are used, handled or stored. They must be left in a suitable container at the entrance to each facility. Electric lighters will be available in designated smoking areas.

#### 1.7.4 Flammable Materials

Storage of paint and other flammable materials shall not be allowed in the work areas. Other materials may be stored in areas designated by the Contracting Officer.

#### 1.7.5 Fire Protection During Construction

Contract specifications shall be in accordance with COE EM 385-1-1 and NFPA 241 and shall contain the requirements that the activity's fire regulations be followed.

### 1.8 USE OF EXPLOSIVES

Explosives shall not be used or brought to the project site without prior written approval. Requests shall be submitted to the Contracting Officer for approval by Range Safety Engineering Support, 45SW/SESE. Such approval shall not relieve the Contractor of responsibility for injury to persons or for damage to property due to explosive operations.

Storage of explosives, when permitted on Government property, shall be only where directed and in approved storage facilities. These facilities shall be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

Powder actuated tools [are] [are not] permitted to be used at this construction site.

#### 1.8.1 Powder Actuated Tool Requirements

All requirements of 29 CFR 1926.302(e) shall be followed for the use of powder actuated tools.

##### 1.8.1.1 Operator Training

All operators of powder actuated tools will be trained and be able to show proof of training in the safe use of these tools. Proof of training shall be from the tool manufacturer or his representative with copies furnished to the Contracting Officer or his representative on request.

#### 1.8.1.2 Materials

No powder actuated tools will be used to fire a projectile into hardened steel, high tensile steel, cast iron, glazed brick, tile, hard brick, terra cotta, marble, granite, slate, glass, and other extra hard or brittle materials.

#### 1.8.1.3 Approved Tools

Use only powder driven tools bearing the manufacturer's label and number and approved by the Industrial Code of Explosive Powered Tools.

#### 1.8.1.4 Protective Devices

Equip each tool with a steel muzzle guard, at least 3 1/2 inches in diameter and mounted perpendicular to the barrel, to confine flying fragments or particles that might otherwise create a hazard. When a standard shield or guard cannot be used, or when it does not cover all apparent avenues through which flying particles might escape, a special shield or guard, fixture or jig that provides equal protection may be used.

#### 1.8.1.5 Firing Force

All tools will be so constructed that they cannot be fired unless the operator is holding the tool against a work surface with a force at least 5 lb. greater than the total weight of the tool.

#### 1.8.1.6 Storage Of Powder Cartridges

The storage of cartridge type explosives is strictly prohibited at any time within the facility or on CCAFS. Remove all such cartridges from CCAFS at the end of each work day.

#### 1.8.1.7 Tools/Equipment

All tools/equipment used in accomplishing this work will meet UL or FM standards.

#### 1.8.2 Powder Actuated Tools

No powder actuated tools/equipment shall be used or stored at the construction site.

### 1.9 ELECTRICAL

Contractor shall appoint an individual responsible for the electrical safety of each work team to restrict entry to dangerous locations to those authorized by him jointly with the Government.

#### 1.9.1 Temporary Lighting

Any temporary lighting used during the performance of the contract work including installation and material (fixtures, wiring, cables, cords, receptacles, plugs, and associated equipment) used and/or installed shall comply with all requirements of the National Electrical Code, the National Fire Protection Association, and 45 SWI 32-7001 (45 Space Wing Instruction Exterior Lighting Management).

### 1.10 UNDERGROUND UTILITIES

Safety clearance from the Contracting Officer is required before any Contractor personnel enters a manhole. Contractor shall contact the Contracting Officer for support services at least 72 hours in advance.

Contractor shall be responsible for removing water and debris before commencement and during execution of work in manholes.

Contractor shall fully aerate manholes for at least one-half hour using a blower or fan before air sampling.

#### 1.10.1 Buried Warning and Identification Tape

[Polyethylene plastic] [and] [metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic] warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3 inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (intended service) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

##### Warning Tape Color Codes

[Red:]	[Electric]
[Yellow:]	[Gas, Oil, Dangerous Materials]
[Orange:]	[Telephone and Other Communications]
[Blue:]	[Water Systems]
[Green:]	[Sewer Systems]
[White:]	[Steam Systems]
[Gray:]	[Compressed Air]
[Purple:]	[Reclaimed Water]

##### [1.10.1.1 Warning Tape for Metallic Piping

Acid and alkali-resistant polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of tape shall be 0.003 inch. Tape shall have a minimum strength of 1500 psi lengthwise, and 1250 psi crosswise, with a maximum 350 percent elongation.

##### ]1.10.1.2 Detectable Warning Tape for Non-Metallic Piping

Polyethylene plastic tape shall conform to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

#### 1.11 SPECIAL SAFETY REQUIREMENTS

##### 1.11.1 Elevated Work Areas

Rope off and barricade all areas to 20' on all sides beneath work area. All tools shall be tethered during work operations.



### 1.11.2 Facility Evacuation For Hazardous Operations/Conditions At Project Site

Upon hearing an alarm or an evacuation announcement, all personnel in the facility affected are to immediately proceed to their designated Emergency Evacuation Assembly Point (EEAP). Each facility has a clearly marked primary and secondary EEAP. All personnel should evacuate to the primary EEAP unless they are unable to do so due to the location and nature of the emergency. Security guards will be at all EEAP's after an evacuation has begun. All personnel evacuating controlled areas will deposit their controlled area badges at the EEAP. All evacuees are to remain at the EEAP until receiving further instructions from Security and Safety.

All personnel working in the affected areas are required to adhere to the Facility Evacuation Procedure and to ensure that the personnel under their control are aware of the evacuation requirements. The location of EEAP's for the area of work will be included in the Safety Orientation required for work in the project area. On occasion, access to facilities may be denied due to hazardous operations or conditions in progress. The Contracting Officer or his representative shall be immediately notified of denied access/evacuation incidents, their time of occurrence and duration.

From time to time, the U.S. Air Force will conduct evacuation drills in the area. Evacuation drills may or may not affect personnel working at these sites; however, two (2) hours per week interruption shall be allowed for an evacuation drill.

### 1.11.3 Hazardous Wind Velocities

No work shall be performed on the exterior surfaces of the SAB, VIB, SMAB, SMARF, ASOC, RIS, MIS, SLC-17, SLC-36 and SLC-40 when winds are 18-29 knots or more unless suspended work platform devices are secured to the structure. No work shall be performed on these facilities or on any unprotected elevated structures over 6 feet high when winds are 30 knots or more.

## 1.12 RADIATION SAFETY REQUIREMENTS

License Certificates for radiation materials and equipment shall be submitted to the Contracting Officer for all specialized material and equipment brought onto CCAFS or PAFB.

Loss of radioactive material shall be reported immediately to the Contracting Officer.

Actual exposure of the radiographic film or unshielding the source shall not be initiated until after 1700 on weekdays.

In instances where radiography is scheduled in, or near other buildings, no assumptions shall be made as to building occupancy. Where necessary, the Contracting Officer will direct the Contractor to conduct an actual building entry, search, and alert. Where removal of personnel from such a building cannot be accomplished and it is otherwise safe to proceed with the radiography, a fully instructed employee shall be positioned inside such building or area to prevent exiting while external radiographic operations are in process.

### 1.12.1 Use Of Radioactive Materials And Radiation Emitters

The Contractor will apply for and receive a Radiation Use Authorization (RUA) prior to bringing any radioactive material or source of ionizing radiation; or any laser or radio frequency radiation emitter onto PAFB or CCAFS. Any Contractor licensed by the State of Florida to possess and use any radioactive by-product material will apply for and receive reciprocal approval (NRC Form 241) from the Nuclear Regulatory Commission prior to bringing any radioactive by-product material onto Patrick AFB and Cape Canaveral AFS. The Contractor shall comply with all provisions of the RUA including requests to conduct radiation protection surveys and audits intending to protect the general base population. To submit a request for a RUA, contact the Contracting Officer or the 45th Space Wing Radiation Protection Officer, 1380 S. Patrick Drive, Patrick AFB, FL 32925; 321-494-5435.

#### 1.13 FACILITY OCCUPANCY CLOSURE

Streets, walks, and other facilities occupied and used by the Government shall not be closed or obstructed without written permission from the Contracting Officer.

##### 1.13.1 Fire And Exit Lanes

Fire lanes and exit lanes must be kept clear at all times.

##### 1.13.2 Clean Work Areas

Contractor shall prevent the introduction of dirt or dust into areas adjacent to work areas.

#### 1.14 CONFINED SPACES

The Contractor shall comply with 29 CFR 1910.146 "Permit-Required Confined Spaces" and brief the Contracting Officer in writing of any hazards encountered during the confined space entry. The Contractor shall provide a copy of their Permit Confined Space Program to the Contracting officer for approval prior to beginning work.

The 45 SW/SEG maintains a master list of all identified confined spaces on CCAFS. They can be reached at 494-2202 for information about any confined spaces. Special requirements, coordination, and precautions will apply to Permit-Required Confined Spaces. Testing, surveillance and monitoring shall be required by Contractor personnel in these type of work spaces, prior to entry. Notify the Contracting Officer of any confined spaces requiring entry that are not identified but suspected as Permit-Required Confined Spaces.

#### 1.15 ROOFING AND COATING

At the beginning of each work day the Contractor shall check with the Contracting Officer before proceeding to work on the roof to ensure safe work conditions. Tar pot operations shall comply with 45 SWI 32-2001, Paragraph 4.28.

#### 1.16 WELDING AND FLAME CUTTING

Contractor shall clear welding and cutting operations with the Contracting Officer before operations begin. A welding permit is required for welding and cutting operations. Contractor shall provide his own fire watch and appropriate number of fire extinguishers of the proper size and type for

the operation being performed.

Contractor shall discontinue burning, welding, or cutting operations 1 hour prior to the end of the normal work day. A workman shall remain at the site for 1 hour after discontinuing these operations to make thorough inspection of the area for possible sources of latent combustion. He shall be equipped with two full 10-pound dry chemical fire extinguishers. Extinguishers shall be rated for Class A, B and C fires. Current inspection sticker shall be affixed to the extinguisher. Any unsafe conditions shall be reported to the Center Fire Station.

During operations involving possible fire hazard, the Contractor shall notify the Contracting Officer and not proceed until clearance is obtained in writing.

#### 1.16.1 Welding, Burning, Spark Or Slag Producing Operations

These operations shall be permitted only in the presence of a firewatch, and only during specific periods approved by the U.S. Air Force. Slag or welding blankets shall be used in all areas to contain any hot sparks or slag material. Flashback arrestors shall be utilized on all compressed gas welding operations.

[No cutting, welding, or spark producing operations will be permitted at the work site. If practical, an area for such operations outside of the work area will be designated by the U.S. Air Force.]

#### 1.17 SEVERE STORM PLAN

In the event of a severe storm warning, the Contractor shall:

- a. Secure outside equipment and materials and place materials exposed to damage in protected locations.
- b. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.
- c. Ensure that temporary erosion controls are adequate.

##### 1.17.1 CCAFS Lightning Alert System

There are two types of lightning alert announcements, each made over the Cape Aural Warning System.

##### 1.17.1.1 "Phase 1 Lightning Alert"

Announced when lightning is expected to be within 5 miles of a specific area within 30 minutes of the announcement.

Required Action during Lightning Alert (Phase 1) Period: All personnel shall withdraw to a safe area as designated by the USAF. When working in an open exposed area or performing an electrical operation or cross-country piping operation, the operation shall be secured and personnel shall proceed to a lightning safe area prior to the Phase 2 Lightning Warning start time. If a hoisting operation is in progress, the lift will be promptly completed or returned to ground level, secured and the area cleared. Loads may not be left suspended.

##### 1.17.1.2 "Phase 2 Lightning Warning"

Announced when lightning is imminent or occurring within 5 miles of a specific area.

Required Action during Lightning Warning (Phase 2) Period: All personnel shall remain within a safe area as designated by the USAF. No hoisting operation, electrical operation (connecting or disconnecting), power tool operation, or cross-country piping system work shall be performed during a Phase 2 lightning warning period.

#### 1.17.1.3 Required Action LC-36

The blockhouse (B/H) monitor will make additional PA announcements when evacuation of the area is required due to lightning. In general, evacuation is required whenever a vehicle with payload, propellants, solid rocket motors, or ordnance is present or electro-explosive devices are electrically connected. The Atlas/Centaur Complex 36 Operations Safety Plan (Reference: Chapter 4 & SOP 12) provides detailed instructions. Contact the B/H monitor (ph. 853-5961) for instructions when in doubt.

#### 1.17.1.4 Required Action LC-40

Lightning warnings for launch complex without launch vehicle present or with launch vehicle present but without cryogenic propellants on board: Personnel may remain within the envelop boundary of the Complex Lightning Mitigation System (LMS), known as the safe area. The safe area includes the following: MST, UT, Pad Apron, AC Shelter, AGE Building, SCAPE Change House, and the Storage Building. The Fuel, Oxidizer, and Gas Farms, and all outlying areas are not included. During the warning, personnel may work within the safe area subject to above indicated restrictions and to the following conditions: Entry and exit from the complex and travel to and from the safe area shall be made only in metal covered vehicles. Personnel must remain clear of catenary wires (50 feet) and LMS anchors (90 feet).

Lightning warning for launch complex with a launch vehicle present and with cryogenic propellants on board: All personnel shall evacuate immediately to the Complex Ready Building outside the complex fence.

## PART 2 PRODUCTS

Not Used

## PART 3 EXECUTION

Not Used

-- End of Section --